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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,792	03/30/2001	Alain Wacker	66457-146-7	4992

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EXAMINER

MOE, AUNG SOE

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,792

Applicant(s)

WACKER, ALAIN

Examiner

Aung S. Moe

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 recite a method claims without setting forth any active and positive steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. Therefore, **claims 1-9 are indefinite** where it merely recites a use with functional limitations without any active, positive steps delimiting how this use is actually practiced. The Examiner noted the functional limitations followed by “*whereby*” statement in the method claims 1-9, however, it is unclear whether Applicant is relying such functional limitations as “active and positive steps” for the method claims 1-9.

In view of the above, the Applicant is requested to specifically pointing out active and positive steps of the method claims 1-9. For the purpose of the examination, claims 1-9 will be given broadest reasonable interpretation consistent with the supporting description.

Claim Objections

4. Claims 1-14 are objected to because of the following informalities:

In claim 1, line 2, “**the** camera” should be changed to - - **a** camera - -;

In claim 1, line 3, “**the** position” should be changed to - - **a** position - -;

In claim 1, line 3, “**the** shift” should be changed to - - **a** shift - -;

In claim 1, line 4, “**the** position” should be changed to - - **a** position - -;

In claim 1, line 5, “**the** respective sensor position information” should be changed to - - **a** respective sensor position information - -;

In claim 4, line 2, “**and or**” should be changed to - - **and/or** - -;

In claim 4, line 4, “**on** electronic phantom image” should be changed to - - **one** electronic phantom image - -.

In claim 5, line 2, “**the** other image” should be changed to - - **an** other image - -;

In claim 9, line 2, “**the** mechanical shift” should be changed to - - **a** mechanical shift - -;

In claim 9, line 4, “**the** electronic image shift” should be changed to - - **an** electronic image shift - -;

In claim 10, line 3, “**the** electric output” should be changed to - - **an** electric output - -;

In claim 12, line 5, “**the** drive” should be changed to - - **a** drive - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3, 4, 8-10, 11 and 14 are rejected under 35 U.S.C. 102(a) as being anticipated by Hiroyuki et al. (Translation of JP 10-038961).

Regarding claim 1, Hiroyuki '961 discloses a digital photography method: whereby a matrix (i.e., noted the image sensor device 12 having $n \times (m+1)$ sensor matrix) of optoelectric sensor elements is shifted at least once relative to the imaging beam of a camera (i.e., as shown in Fig. 2, the sensor element is shifted from (i, j) position to either (i+1, j) position), and whereby there is stored (i.e., noted the memory 13b and 13c as shown in Fig. 2) a first image (i.e., K frame) in the position (i, j) before the shift and a second image (i.e., either K-1 or K+1 frame) in the position after the shift (i+1, j), each in the form of electric image signals as a function of the sensor output signals (i.e., noted that the electric images such as K/K+1 frames are function of the sensor 12 output signals) and having the respective sensor position information (i.e., noted the position information such as (i, j)/(i+1, j)), characterized in that signals depending on the image signals of both images (i.e., K frame image and K+1/K-1 frame of images) are forwarded to a comparison operation (i.e., noted the comparison means 13e as shown in Fig. 2; see

paragraphs 0014+) and whereby a comparison-result image (i.e., the image output from the element 13f as shown in Fig. 2) is in turn produced in the form of electric comparison-result signals (i.e., noted the comparison-result signals provided by the comparison means 13 e to the output means 13f as shown in Fig. 2) together with a position information (i.e., as discussed in paragraphs 0016-0020 and Fig. 2, the output image is produced based on the comparison result of the comparison means 13e containing the position information, such as (i, j) or (i+1, j)), whereby the first **and/or** the second image is modify by means of electric signals of the comparison-result image for the creation of a photograph (as shown in Fig. 2, the first and/or the second image from the storage 13b/13c is modified by means of the electric signals of the comparison-result image generated by the comparison means 13e at the output means 13f for the creation of photograph image information; see paragraphs 0016-0020).

Regarding claim 3, Hiroyuki '961 discloses whereby electric image signals of the two images (i.e., the images K, K+1 and K-1) are compared with one another, whereby sensor elements are identified as impurity-containing (i.e., noted that the random defect of the pixels sensor elements of the image K and K+1/K-1 is identified by the elements 13; see paragraphs 0016-0020), and whereby output signals (i.e., noted the output signals from the comparison means 13e and the output means 13f) provide a comparison result in the comparison-result image (i.e., noted the image provided by the output means 13f based on the comparison result from the comparison means 13e as shown in Fig. 2; see paragraphs 0016-0020).

Regarding claim 4, Hiroyuki '961 discloses whereby the first image and/or the second image (i.e., the images K, K+1 and K-1) is shifted by calculation (i.e., as shown in Figs. 1 and 2, the element 13 is capable of calculating the image signals by judging coincidence/inequality,

Art Unit: 2612

thereby shifting of the image is performed; see paragraphs 0016-0019) and whereby the position information assigned to the electrical image signals is altered (i.e., noted the changed of K-1 to K+1 and the position information of (i+1, j) and (i-1, j) as shown in Fig. 2) so that at least one electronic phantom image is created as one of the images to make a comparison with (i.e., as discussed in paragraph 0016+ that K+1 frame and K-1 frame of images are created as one of the images to make a comparison with the K frame image).

Regarding claim 8, Hiroyuki '961 discloses whereby it is concluded that impurities (i.e., noted that a random **defect** of the image can be judged in the element 13 as discussed in paragraphs 0016+) on the matrix (i.e., the image sensor matrix as shown in Fig. 2) are from the comparison-result image (i.e., noted that comparison means 13e and output means 13f provide the comparison-result image to determine a random defect of the pixel of the image frames at the element 13 as shown in Fig. 2; see paragraphs 0016+) and/or via the displaced image areas (i.e., noted the K+1/K-1 frame of image areas as shown in Fig. 2) in the imaging beam (i.e., noted the imaging beam provide by the lens 10 and the scanner 11 as shown in Fig. 1).

Regarding claim 9, Hiroyuki '961 discloses whereby one conducts a shift by calculation of at least **one of** the recorded images (i.e., the images K, K+1 and/or K-1 as shown in Fig. 2) aside of the mechanical shift (i.e., noted the mechanical shift by driving the scanner 11 with the control unit 14 as shown in Fig. 1) of the matrix (i.e., noted the sensor matrix "m" as shown in Fig. 2 is shifted due to the mechanical shift of the scanner 11) and whereby one evaluates the different reproduction behaviors during mechanical matrix shift and an electronic image shift for interpretation of the reproduction (i.e., noted that the image data read out from the sensor matrix "m" as shown in Fig. 2 is mechanically shifted by driving the scanner 11 to reproduce an

Art Unit: 2612

electronically shifted image $K+1$, and the different reproduction behaviors of the images $K+1$ and $K-1$ is evaluated by the comparison means 13e for interpretation of the reproduction image outputs at the output means 13f; see paragraphs 0016+).

Regarding claim 10, Hiroyuki '961 discloses a digital camera (i.e., noted the digital camera as shown in Fig. 4; see paragraph 0003) having an optical system (10/11) that forms an imaging beam (i.e., see Fig. 1) and having a matrix (i.e., noted the sensor 12 and the element "m" as shown in Figs. 1 and 2) of photoelectric sensor elements which may be shifted relative to said imaging beam of the camera (i.e., noted the image sensor matrix "m" as shown in Fig. 2 is shifted), characterized in that an electric output of the matrix (i.e., noted the output of the sensor 12 of the matrix "m" as shown in Figs. 1 and 2) is operationally connected to the inputs of at least two image memory units (13b, 13c), whereby their outputs (i.e., noted the output of the memory units 13b and 13c as shown in Fig. 2) are operationally connected to the inputs of the comparison unit (13e), and whereby the output of said comparison unit (13e) leads in turn to an input of a computing units (noted the output of the comparison means is lead to the control/computing unit 14 and the output means 13f respectively).

Regarding claim 11, Hiroyuki '961 discloses wherein the outputs of the image memory units (i.e., the output of the memory units 13b/13c) are operationally connected to the inputs of the comparison unit (i.e., noted the connection between the memory units 13b/13c and the comparison means 13e as shown in Fig. 2).

Regarding claim 14, Hiroyuki '961 discloses that the camera has a computing unit (i.e. the elements 13/14) which shifts and electronically stored image (i.e., noted the image K , $K+1$ and/or $K-1$ stored in the memory units 13b/13c) by computation (i.e., noted that the elements 13

Art Unit: 2612

and 14 is capable of performing a computations) and which computing unit compares (i.e., noted the comparison means 13e) said shifted image (i.e., K+1 and/or K-1) to an image (i.e., K frame) recorded by said matrix (m).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroyuki '961 in view of Howell (U.S. 6,570,613).

Regarding claim 2, although Hiroyuki '961 discloses whereby the first and/or the second image (i.e., noted the images stored in the memory 13b/13c) is prepared from more than one partial image (noted the partial image K+1 and K-1) created by additional shifts of the matrix (i.e., the sensor 12) corresponding to their location distribution of the sensor elements (i.e., see Fig. 2), Hiroyuki '961 fails to specifically show the use of color-selective sensor elements in the digital photography method as required by present claimed invention.

However, the above-mentioned claimed limitation is well known in the art as evidenced by Howell '613. In particular, Howell '613 teaches that it is conventionally well known to use color-selective sensor elements (i.e., see Figs. 8 and 11; the elements 21; col. 7, lines 19+) in the digital photography method for the purpose of enhancing the image resolution thereof (i.e., see col. 5, lines 24+).

Art Unit: 2612

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Hiroyuki '961 by providing color-selective sensor elements as taught by Howell '613 for the purpose of enhancing the image resolution by providing a high quality color image thereof.

Allowable Subject Matter

9. Claims 5-7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

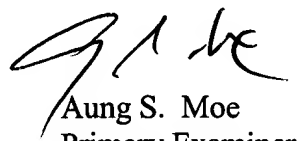
- a. O'Neil '865, Allred '584, Kancler '813 and Kino '553, Katoh '848 and Broekaert '312 shown a system and method for shifting the image generated by the imaging system.

Art Unit: 2612

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
September 3, 2004